

PATENT SPECIFICATION

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(54) COUNTERSINKER ASSEMBLY

(71) I, AKE KNUTSSON, of Strandvagen 10, Traryd, 280 50 Stromsnasbruk, Sweden, of Swedish Nationality, do hereby declare the invention, for which I pray that a patent may be granted to me, and the method by which it is to be performed, to be particularly described in and by the following statement:—

The invention relates to a countersinker assembly.

Devices used to countersink holes during boring are well known; for example it is well known to countersink holes to accommodate screwheads, boltheads or other similar structures that may be fixed in the countersunk holes. Known devices of this sort have been cumbersome to a large extent and have been virtually impossible to use. It has been found that a certain amount of swarf tends to accumulate in the bore hole and the countersunk hole and causes such a severe friction that both the drill and the countersinker assembly have been destroyed.

The present invention provides a countersinker assembly which is to be attached to a spiral fluted drill, the assembly comprising a countersinker having an axial bore to accommodate the drill and being divided longitudinally into two halves, which are each provided with a cutting edge, and means for urging the halves towards one another to grip the drill.

The invention will be further described by way of example only, with reference to the accompanying drawings in which:

Figure 1 shows a side view of a countersinker assembly partly in longitudinal cross section, attached to a spiral fluted drill;

Figure 2 shows a plan of the arrangement of Figure 1;

Figure 3 shows a bottom plan of the arrangement of Figure 1;

Figure 4 shows a side view of the halves of the countersinker; and

Figure 5 shows a plan of the halves of the countersinker.

The drawings illustrate a countersinker 2 which is divided longitudinally into two halves, each of the halves of the countersinker being

provided with an axial, semicircular section track 11; the halves of the countersinker together enclose a spiral fluted drill 1. For urging the halves of the countersinker towards one another to grip the drill, a collar 4 is arranged, which at the top is provided with internal threads and at the bottom is formed with an internal conical surface. Furthermore there is an externally threaded collar 5, which at the top is internally conically formed and provided with a hole 10 of slightly greater diameter than the drill. On attaching the halves of the countersinker, collars 4, 5 are screwed together and engage corresponding conically tapering surfaces on the halves. The collar 5 has external flats 8, so that it can be tightened easily by a suitable tool, and the collar 4 has a bevel 6. The cutting edge of each half of the countersinker leads the respective cutting edge of the spiral fluter of the drill.

On each of the halves of the countersinker 2 there is an internally threaded hole 9 allowing attachment of a swarf diverter 3, which extends into the spiral flutes of the drill and together with the face 12 of the corresponding half of the countersinker forms a diverting channel for swarf. The diverters are arranged so that if the countersinker slips rotationally on the drill, they are deflected out of the drill flutes.

WHAT I CLAIM IS:—

1. A countersinker assembly which is to be attached to a spiral fluted drill, the assembly comprising a countersinker having an axial bore to accommodate the drill and being divided longitudinally into two halves, which are each provided with cutting edge, and means for urging the halves towards one another to grip the drill.

2. A countersinker assembly as claimed in Claim 1 wherein the outer surface of the countersinker has conically tapering regions on either side of a cylindrical region, the urging means comprising an externally threaded collar screwed into an internally threaded collar, the collars having respective internal

conical surfaces which engage the respective tapering regions so as to urge the halves towards one another as the one collar is screwed into the other.

- 5 3. A countersinker assembly as claimed in Claim 1 or 2, when attached to a spiral fluted drill, wherein the cutting edge of each half leads a respective cutting edge of the spiral fluter of the drill.

- 10 4. A countersinker assembly as claimed in Claim 1, 2 or 3 wherein the halves are each

provided with a swarf separating element which extends into the inward turned spiral flutes of the drill, so that a swarf-diverting channel is formed in conjunction with the countersinker half. 15

5. A countersinker assembly substantially as hereinbefore described with reference to the accompanying drawings.

MARKS & CLERK.

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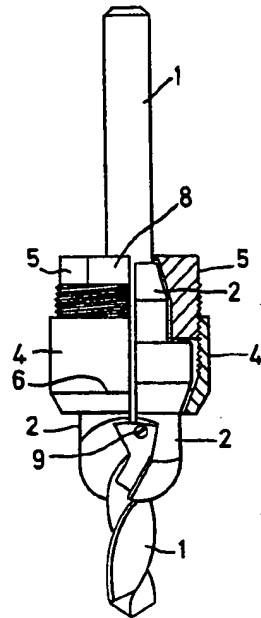


FIG. 1.

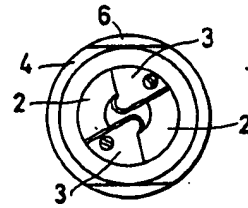


FIG. 3.

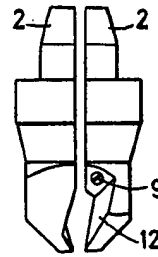


FIG. 4.

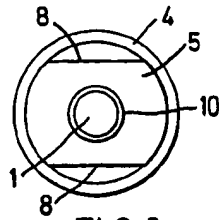


FIG. 2.

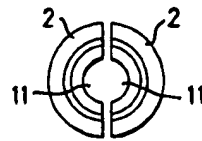


FIG. 5.